

## REMARKS

Claims 1, 14, 16, and 25 have been amended. Claims 3, 5-6, 8, 11-12, 17, 20-21, and 32-34 have been canceled. Therefore, claims 1-2, 4, 7, 9-10, 13-16, 18-19, 22-31, and 35-37 are pending in the case. Further examination and reconsideration of pending claims 1-2, 4, 7, 9-10, 13-16, 18-19, 22-31, and 35-37 are hereby respectfully requested.

### Section 103(a) Rejections

Claims 1-3, 5-18, and 20-37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0093648 to Nikoonahad et al. (hereinafter “Nikoonahad”) in view of U.S. Patent Application Publication No. 2002/0109110 to Some et al. (hereinafter “Some”). Claims 4, 19, and 30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nikoonahad. Claims 3, 5-6, 8, 11-12, 17, 20-21, and 32-34 have been canceled thereby rendering their rejections moot. As will be set forth in more detail below, the § 103 rejections of claims 1-2, 4, 7, 9-10, 13-16, 18-19, 22-31, and 35-37 are respectfully traversed.

To establish *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974), MPEP 2143.03. The cited art does not teach or suggest all limitations of the currently pending claims, some distinctive limitations of which are set forth in more detail below.

**The cited art does not teach, suggest, or provide motivation for collecting light scattered from a specimen with a collection channel and detecting light, which is collected by the collection channel with multiple detection channels, and which has a wavelength range selected such that light fluoresced from the specimen is not detected.** Amended independent claim 1 recites, in part: “collecting light scattered from the specimen with a collection channel; detecting light collected by the collection channel with multiple detection channels, wherein the detected light has a selected wavelength range, and wherein the

wavelength range is selected such that light fluoresced from the specimen is not detected.” Amended independent claims 14, 16, and 25 recite similar limitations. Support for the amendments to the claims can be found in the claims as originally filed, for example, in claims 3 and 32 as originally filed and in the Specification as originally filed, for example, on page 7, lines 2-8, page 13, lines 9-11, page 14, lines 23-24, page 16, lines 12-14 and 17-19, and page 32, lines 4-20.

Nikoonahad discloses methods and systems for determining an implant characteristic and a presence of defects on a specimen. The Office Action states that “Nikoonahad does not expressly disclose detecting light collected by the collection channel with multiple detection channels, wherein the detected light has a selected wavelength range.” (Office Action -- page 3). Therefore, since Nikoonahad does not teach detecting light, which is collected by a collection channel with multiple detection channels, and which has a selected wavelength range, Nikoonahad does not teach collecting light scattered from a specimen with a collection channel and detecting light, which is collected by the collection channel with multiple detection channels, and which has a wavelength range selected such that light fluoresced from the specimen is not detected, as recited in claims 1, 14, 16, and 25.

The Office Action also states that “Nikoonahad reasonably implies such a configuration (see for example figure 7).” (Office Action -- page 3). Applicants respectfully traverse this assertion. For example, Nikoonahad discloses detecting light specularly reflected from a specimen with two detectors, as shown in Fig. 7 of Nikoonahad. Therefore, since Nikoonahad discloses detecting specularly reflected light with two detectors, the light detected by the two detectors travels along the same collection path (i.e., the specular reflection path) and therefore may be collected by the same collection channel. However, although Nikoonahad discloses using two detectors to detect light specularly reflected from a specimen that may be collected by the same collection channel, Nikoonahad does not suggest or provide motivation for collecting light scattered from a specimen with a collection channel and detecting light collected by the collection channel with multiple detection channels. Therefore, contrary to the assertion in the Office Action, Fig. 7 of Nikoonahad does not reasonably imply collecting light scattered from a

specimen with a collection channel and detecting light collected by the collection channel with multiple detection channels. As such, Nikoonahad does not teach, suggest, or provide motivation for collecting light scattered from a specimen with a collection channel and detecting light, which is collected by the collection channel with multiple detection channels, and which has a wavelength range selected such that light fluoresced from the specimen is not detected, as recited in claims 1, 14, 16, and 25. Consequently, Nikoonahad does not teach, suggest, or provide motivation for all limitations of claims 1, 14, 16, and 25.

Nikoonahad also cannot be combined with the other cited art to overcome deficiencies in the teachings contained therein. For example, Some discloses laser scanning wafer inspection using nonlinear optical phenomena. In particular, Some states that “the present invention is a method and apparatus for optical inspection of semiconductor wafers that obtains information relating to the chemical composition and interfaces between materials simultaneously with obtaining topographical and feature size information, thereby enabling fast, reliable and comprehensive defect detection.” (Some -- paragraph 0008). Some also states that “the separated light at the non-incident wavelength (or wavelengths) is sent to a discrete detector (or detectors), such as a PMT, which converts the detected nonlinear optical phenomena, such as fluorescence.” (Some -- paragraph 0023). In addition, Some states that “Because the present invention utilizes linear and nonlinear optical phenomena to detect defects based not only on the topography and size of wafer surface features, as do conventional optical inspection tools, but also based on chemical composition and interfaces between materials, defects can be detected with greater accuracy and classified with greater precision.” (Some -- paragraph 0023). Some further states that “one skilled in the art would appreciate that detectors 150b, 150c must be provided in sufficient number and adjusted to detect the desired non-incident wavelengths, and processor 170 must be programmed to process the signals from detectors 150b, 150c corresponding to nonlinear optical phenomena and generate a defect map incorporating the results.” (Some -- paragraph 0035, emphasis added).

Some, therefore, teaches that the prior art system must include detectors adjusted to detect non-incident wavelengths corresponding to nonlinear optical phenomena (e.g.,

fluorescence). Some also does not teach that the prior art system is configured such that light fluoresced from the specimen is not detected. In addition, Some teaches that the prior art system is configured to detect such nonlinear optical phenomena such that the invention of Some can obtain information relating to the chemical composition and interfaces between materials. As such, Some clearly suggests to one of ordinary skill in the art that the intended purpose of Some is to obtain information relating to the chemical composition and interfaces between materials using signals corresponding to nonlinear optical phenomena such as fluorescence. In this manner, modifying the prior art invention of Some such that light fluoresced from the specimen is not detected would render the prior art invention of Some unsuitable for its intended purpose. If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). MPEP 2143.01. There can be, therefore, no suggestion or motivation to modify the prior art invention of Some such that light fluoresced from the specimen is not detected by the prior art invention of Some. Therefore, Some does not teach, suggest, or provide motivation for collecting light scattered from a specimen with a collection channel and detecting light, which is collected by the collection channel with multiple detection channels, and which has a wavelength range selected such that light fluoresced from the specimen is not detected, as recited in claims 1, 14, 16, and 25. Consequently, Some does not teach, suggest, or provide motivation for all limitations of claims 1, 14, 16, and 25 and cannot be combined with Nikoonahad to overcome deficiencies contained therein.

The Office Action states that “such a configuration is old and well known in the subject matter area of the invention.” (Office Action -- page 3). Applicants respectfully traverse this assertion. However, the Office Action is referring to the configuration previously recited in claim 1, and the amendments to claim 1 render this assertion moot.

For at least the reasons stated above, claims 1, 14, 16, and 25, as well as claims dependent therefrom, are patentably distinct over the cited art. Accordingly, removal of the § 103 rejections of claims 1-2, 4, 7, 9-10, 13-16, 18-19, 22-31, and 35-37 is respectfully requested.

**CONCLUSION**

This response constitutes a complete response to all issues raised in the Office Action mailed January 24, 2007. In addition, the art cited but not relied upon is not believed to be pertinent to the patentability of the present claims. In view of the amendments and remarks presented herein, Applicants assert that pending claims 1-2, 4, 7, 9-10, 13-16, 18-19, 22-31, and 35-37 are in condition for allowance. If the Examiner has any questions, comments, or suggestions, the undersigned earnestly requests a telephone conference.

The Commissioner is authorized to charge any fees which may be required or credit any overpayment to deposit account number 02-0393.

Respectfully submitted,

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